



Intensive Exercise Improves Carbohydrate Metabolism

Researchers at Duke University investigated how exercise influences the metabolism of carbohydrates in people at high risk for diabetes. They studied five overweight and sedentary people on an intensive exercise regimen for nine months, measuring blood glucose and insulin levels.

The exercise program consisted of a combination of stationary biking, treadmill walking and stair climbing. It gradually built up to the equivalent of running 20 miles a week.

After nine months, the researchers found increased insulin sensitivity in these people; that is, their insulin was better able to stimulate glucose metabolism than previously. Consequently, their fasting insulin levels were lower. That shows improved carbohydrate metabolism, which could aid in preventing the development of insulin resistance and glucose intolerance in people at risk for diabetes and heart disease, according to the study authors.

The participants stopped exercising for one month after the exercise program. They still showed greater insulin sensitivity, indicating that the effects of exercise may be longer lasting than previously believed.

The researchers will now conduct further research with a larger group of patients to determine just how often and at what intensity people should exercise to reduce their chances of developing diabetes or heart disease.

While the patients in this study performed intensive exercise, it is important to note that the Diabetes Prevention Program reported last summer that even moderate exercise such as walking can reduce the development of diabetes in people at high risk by 58 percent.

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Source: Slentz CA, Torgan CE, Houmard JA, et al. Long-term effects of exercise training and detraining on carbohydrate metabolism in overweight subjects. *Clinical Exercise Physiology*, February 2002;4(1):22-29.

